					1		
					1		
					1		

Total No. of Questions : 08

## Ph.D in Faculty of Engineering (Electrical Engineering) COMMUNICATION SYSTEMS

M.Code : 77403

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

Max. Marks : 100

- 1. Attempt any FIVE questions out of EIGHT question.
- 2. Each question carry TWENTY marks.
- 1. Discuss uniformly and non-uniformly excited equally spaced linear arrays in detail.
- 2. a) What is the principle of frequency independent antennas? Explain.
  - b) Describe general feed model with suitable diagram.
- 3. a) Write a brief note on the Microstrip antennas.
  - b) Explain biconical and sleeve antennas with its uses.
- 4. State and explain Woodward- Lawson sampling method in detail. 5.
- a) Discuss the digital modulation formats with suitable diagram.
  - b) What is the effect of inter symbol interference? Explain.
- 6. Compare shaped beam synthesis methods in detail.
- 7. a) Discuss the distance property of convolutional codes with suitable example.
  - b) Explain the applications of digital modulation techniques.
- 8. Write a short notes on the following :
  - a) Power spectra b)Bandwidth efficiency c)Coding gain d) Turbocodes

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student

**1** | M-77403